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| **Unit Overview: Conservation of energy** | | | | | | | | | |
| **Half- Term:** | AUT 1 | AUT 2 | SPR 1 | SPR 2 | SUM 1 | SUM 2 | | **No of Lessons:** | **12** |
| **Key Focus for Unit:**  *What is the key knowledge being delivered?*  *What is the intent of this unit?* | | | | | | | | | |
| In this topic students are reintroduced to the concept of energy and energy stores. Students investigate the law of conservation of energy and apply this to the concept of efficiency and wasted energy. The law of conservation of energy and efficiency are linked to current issues around the use of energy in peoples lives and how we can reduce the amount of energy wasted. Students should be able to state the law of conservation of energy, recall and apply key equations relating to different energy stores and efficiency. | | | | | | | | | |
| **Key Knowledge and Big Ideas:**  *What* ***Powerful Knowledge*** *and* ***Big Ideas*** *are explored in this Unit?*  *How have these progressed from previous learning? What* ***gaps in knowledge*** *have you identified from* ***baselining*** *and how are the being closed?* | | | | | | | | | |
| BIG IDEA: Energy - the law of conservation of energy is a fundamental law of physics which holds together many different branches of physics.  Students will have previously learnt about energy in heat transfers and energy resources topics in year 9, as well as the energy transfers topic in year 7.  Students will meet the big idea energy again in yr10 when learning about electricity, yr11 when learning about waves, and yr12 when learning about thermal physics and mechanics.  Student baselines are assessed through retrieval practice in the starter to identify gaps initial gaps in student knowledge. Lessons are adapted over the unit to address and bridge these gaps to ensure all students have the requisite understanding to access the next units in the big idea. | | | | | | | | | |
| **Unit Assessment:**  *How will this unit be assessed?*  *What is the frequency of assessments – baselines etc?* | | | | | | | | | |
| Formative assessment:   * 6 mark extended writing task * Assesses powerful knowledge and literacy * Feedback and response time built into lesson   Summative assessment:   * 45minutes assessment * Assesses powerful knowledge through past exam questions * Feedback and response time built into lesson   Homework KS3/4:   * Weekly Educake assignments (Yr 7 -11) * Assesses powerful knowledge and literacy | | | | | | | | | |
| **Key Skills Explored** | | | **Vocabulary Selected for DVI** | | | | **Links to Previous Unit** | | |
| * **Rearranging equations** * **Applying abstract concepts to real world situations** | | | * **Conservation** * **Efficiency** * **waste** * **surroundings** * **Kinetic** * **Potential** | | | | * **Heat transfers – yr9** * **Energy resources – yr9** * **Energy transfers – yr7** | | |
| **Links to Careers/Employability** | | | **How does this unit prepare students for the next unit?** | | | | | | |
| * **Mechanical engineer** * **Product design** * **Heating engineer** | | | * **Electricity yr10** * **Waves – yr11** * **Thermal physics – yr12** | | | | | | |

KO

Black (all)

Higher (Dark green)

Triple (Maroon / burgundy)